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PROBLEMS OF THE FARM MANAGER.

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Thousands of men and women are ambitious with the desire to own a farm of their own and thereon build a home and a profitable business. In the days of homesteading and cheap land this desire could be realized with very little capital provided one wished to cope with the hardships and difficulties of frontier life. At present practically all the available government land has been homesteaded, the frontier has disappeared and practically all the available agricultural land is held in private ownership and is increasing in value from the most remote areas of production or from the least productive land to the centers of population and the most highly productive land associated with the best social advantages.

A normal increase in land values should not alarm the prospective land owner because such increase is normally based on the added improvements to the farm and upon the public and private expenditures for transportation, for telephones, for schools, for churches, and for such other private and public improvements and utilities as will make it possible to maintain a reasonable return per dollar invested coupled with increasingly better social conditions.

The increased land values however have created at least one outstanding problem for the one who intends to become a farm owner and that is the necessity of accumulating a sufficient amount of capital to meet the required initial payment on the land and to provide the necessary working capital for the operation of the farm. In negotiating a land deal it has been quite customary between the seller and the buyer to come to certain so called terms with regard to the amount of the first payment and subsequent payments and interest rates on the indebtedness with the usual result that the buyer sinks from 80 percent to 90 percent of his capital in the land and leaves from 10 percent to 20 percent for working capital and improvements and is consequently handicapped in the operation of his farm and must trust to luck in making his subsequent payments, which amounts are stipulated in the contract with the provision that if not paid such contract shall be null and void, time being the essence of the agreement, etc.

This is a good beginning of a nightmare, for the buyer, which may last for several years or may end abruptly as the case may be, and to make the realization of this nightmare as vivid as possible, the stipulated annual payments are often much larger than the farm can reasonably be expected to return above the family cost of living, interest on the investment, and the cost of operation.

This condition offers a field for study in farm economics which should lead to certain standardizations for farm finance applicable to the different agricultural regions of the United States. This leads up to the problem which the M. Sigbert Awes Company, in its business of land settlement in North Dakota, is attempting to solve and which has created for the company problems in farm economics and farm management.

This company sells its land under what is known as a Crop Stock and Insurance Contract. Under this contract the buyer makes a small initial payment of about 20 percent of the purchase price of the farm and he is allowed ten years in which to complete the remaining payments by each year turning over to the company one half of the proceeds from the sale of crops and livestock and livestock products which is applied, first, in payment of the interest, and, second, in reduction of the principal until paid. The insurance feature provides that the buyer must insure his life to the company as beneficiary during the period of the contract for an amount equal to his indebtedness, which means that in the event of death the debts on the farm will be satisfied in full and the family will inherit the farm clear of all incumbrances.

The success of a project of this kind from a business standpoint depends entirely on whether the farmers who have bought land under this contract will make good and the more rapidly they will make good the greater the success of the business.

We therefore recognize that this business venture aside from its economic aspects is a problem in farm management and that the success of it is very largely contingent upon a knowledge and administration of sound principles of farm management applied to every farm from the time that the new owner takes possession until the farm is paid for, and it is therefore essential and important that the new owner receive the proper advice with regard to the best methods of farming and farm management and that proper direction be given in the organization of each farm into an efficient business unit as rapidly as is consistent with the various conditions that may affect every individual farm. In this connection it should be said that the

question of the proper organization of the farm does not depend on the means of the new owner. The company keeps enough capital in reserve to provide the necessary working capital to begin with and to put in the necessary improvements to adequately shelter the livestock. This of course is added to the buyer's indebtedness subject to the terms of the contract as stated heretofore, or if he is able to make a fairly large initial payment on the farm, arrangement is made with him so that enough of this payment is reserved to provide him with the necessary working capital. This, then, does not leave any handicap to the immediate procedure with such a program as may seem the most profitable to pursue in the proper organization of every farm and naturally brings into prominence a number of problems in farm management.

Our major problems in farm management have presented themselves as follows:

1. The Selection of the Farm.
2. The Distribution of the Investment.
3. The Farm Layout.
4. The Selection of Enterprises.
5. The Distribution and the Adjustment of Enterprises.
6. The Labor Schedule.

THE SELECTION OF THE FARM.

Under this scheme of land settlement as well as for the individual farmer, the selection of the land is very important, for the inherent productivity of every farm bears a direct relation to the success and expansion of the business, so when selecting a farm careful consideration is given to the following factors:

1. The soil, its type, fertility condition, drainage condition.
2. Amount of waste land which cannot be reclaimed.
3. Distance from market.
4. Distance from school and church.
5. Condition of roads and distance from state and national highways.
6. Condition of improvements.
7. Condition of water supply.
8. Amount of land which can be used for permanent pasture.
9. Approximate amount of capital required for the investment in working capital and improvements to affect a proper organization of such a type of farming as would be best adapted to the farm.

Sometimes the price asked for the farm is such as to prohibit the

addition of more capital for improvements and proper equipment without over-capitalizing the business.

The selection of the farm is a primary and determining step in farm management for the prospective farmer or for the one who wishes to change location. This phase of farm management therefore must be highly emphasized and the problem analyzed in detail into its various factors so that the value of a given farm can be pretty well established and the type of farm organization best adapted to it can be determined.

THE DISTRIBUTION OF THE INVESTMENT.

In farm organization the proper distribution of the capital is fundamental and the solution of this problem naturally follows the question of the selection of the farm. In this respect the farmer as well as the manufacturer is dealing with the three fundamental factors of production, namely, land, labor, and capital and it is the proper adjustment of these factors that is sought in an ideal distribution of the factors of production.

The adjustment of the factors of production in a farm business however is affected by various conditions which change from time to time so that a mathematically accurate distribution of the investment is probably impossible to obtain, and if obtained it would not remain so very long because of the changes in land values, in labor costs, and in the cost of equipment that are continually taking place. The efficient farm manager, however, will see that the distribution of the investment is correct within certain reasonable limits and he will also make adjustments in accordance with changing economic conditions.

The factors of production of any farm business may be analyzed as follows:

The Factors of Production.

- I. Land.
- II. Labor.
 - 1. Man Labor.
 - 2. Horse Labor.
- III. Capital.
 - 1. Fixed Capital.
 - a. Buildings.
 - b. Fences.
 - c. Wells and Water Works.
 - d. Tile Drains.
 - e. Irrigation Ditches.

2. Working Capital.
 - a. Work Horses.
 - b. Farm Implements and Machinery.
 - c. Productive Livestock.
 - d. Feeds and Seeds.
 - e. Cash.

In studying farm organization in North Dakota it appears that its most outstanding weakness is that the land represents too large a percentage of the total investment. This is apparently due, first, to the fact that among the earlier investors in farms there the tendency was to buy large tracts of land presumably due to its cheapness. Second, that the majority of North Dakota farmer immigrants have later and up to the present time come to the state with grain farming predominantly in mind and have invested nearly all of their available cash and credit in land and many of them have consequently been handicapped for the want of working capital. When lands were cheap the investment in large tracts did not necessarily mean at that time that the distribution of the capital was much out of proportion. However, the proper adjustment in the organization of the farm business that should have conformed with the changing economic conditions have failed to take place and this is probably the greatest weakness to-day in North Dakota's scheme of farm management.

Farmers, whether they are operating small or large businesses, must consider themselves in the rôle of managers, and their success will depend upon how well they can combine their land, their labor and their equipment into an efficient productive unit. This leads to a number of questions and problems. Just what extent of labor and tillage of soil will bring the highest efficiency? Just what is the proper proportion of machinery, work horses, productive livestock, improvements, labor and land to combine to secure the greatest efficiency? And if these factors are adjusted at one time they must be readjusted to conform to new economic conditions. If labor costs rise, it pays to add more machinery and to plan the whole system of management so as to use the labor as efficiently as possible. This may also make it profitable to reduce the cropping area and increase the number of livestock units and thereby increase the practice of pasturing off crops.

Livestock and the quality of livestock and its relation to the most efficient organization of the farm business is fundamental. In the farming of virgin and practically new land in North Dakota livestock has occupied no place of importance as an enterprise but as the

process of farming goes on the manager begins to see the necessity of summer tillage to clean the land and the raising of grass and legume crops to restore the humus and in so doing he resorts to the raising of corn and grasses, and in order to create a market for those crops he resorts to livestock. This leads to the following premises:

1. If practice is to form a basis for conclusions, the value of livestock as an enterprise in connection with tillage and farming of new lands is doubtful.

2. When the cultivation of the soil has reached a point where the presence of weeds and the reduction of humus and fertility necessitate summer tillage and the production of grasses and legume crops and the addition of manure, enough livestock should be secured to consume the roughage so raised and further to utilize the straw and other refuse so that the manure resulting from the same can be returned to the land. This is the first step in the efficient utilization of the labor, land and crops. At this stage of the business the quality of the livestock and the investment which it represents should be in accordance with the quality of the feeds raised and the value of the land.

3. As the value of the land increases and labor and equipment costs rise, the quality of the livestock should be raised accordingly, for to use high-priced land and high-priced labor in the production of low quality livestock is just as wasteful as it would be to use high-priced labor and equipment in the tillage of land of known low productivity.

THE FARM LAYOUT.

The development of the farm layout naturally comes under three divisions.

1. The layout of the farmstead.
2. The planning of the farm buildings.
 - a. Capacities of different buildings.
 - b. Interior arrangement.
3. The layout of the fields.

The practical farm manager desires to develop a layout that will give him the required building capacity, the most convenient and efficient interior arrangement, and a layout of fields that will be easily accessible from the farmstead and yet will conform in size and number to the size of the farm and the distribution of the crops desired. Would it not be of great value to the farm manager to have definite information bearing on the most economic and efficient building unit for given types and sizes of farms for his particular region?

THE SELECTION OF ENTERPRISES.

In the selection of crop and livestock enterprises we are guided by experimental data and the experience of successful farmers which I believe gives us a very reliable basis for the solution of this problem. However, much could be done in working out a more definite grouping of the varieties of grains the kinds of pastures and forage crops and the classes of livestock predominantly adapted to the different regions of a given state.

THE DISTRIBUTION AND ADJUSTMENT OF ENTERPRISES.

After the selection of enterprises comes the question of how much of each to raise. The crop enterprises must be planned to meet the following requirements:

1. To provide a good distribution of labor.
2. To provide an ample supply of the best feed crops that it is possible to raise under the prevailing conditions.
3. To provide for the conservation of soil fertility.
4. To provide for pastures.
5. To allow enough flexibility in the system of cropping so as to make it possible to readily increase the acreage of such crops as can be pastured off and to make such other changes as might be necessary to meet new economic conditions.
6. To provide for a definite percentage of cash crops.

The selection of livestock enterprises is largely a problem of relations, that is, their selection must be largely determined by the kinds of feed crops that can be raised, the inclinations of the farm owner, the size of farm and the amount and quality of labor under control of the manager.

The selection of enterprises, their distribution and adjustment, therefore, is a problem which involves the most careful dovetailing together of the enterprises in such a proportion as will produce from every standpoint the most complete and efficient farm unit.

THE LABOR SCHEDULE.

Is it possible for a farmer who is more or less at the mercy of the weather to work in accordance with a labor schedule? Or putting it a little differently, would a labor schedule make it possible for him to use his labor more efficiently? Those who have studied this phase of farm management will likely answer in the affirmative, and if it is of much importance what are the determining factors that should be used as a basis in working out such a schedule? First: A normal

day's work for the various farm operations. Second: The average date on which the seasonal work begins, and should end and the average number of field working days in each season. Third: The latest date at which it is safe and beyond which it is unsafe to plant crops. Fourth: The proper order or sequence in the planting of the crops.

With such data at hand and knowing the size of his farm and having determined what and how much to raise the farm manager can plan pretty definitely what his labor requirements will be in the field and much of the miscellaneous work can be done when weather conditions prevent the performance of field work.

It appears, therefore, that a carefully worked out labor schedule would have a tendency to make the farm manager adjust his farm operations with his labor supply and he would consequently avoid prolonging his seeding and planting operations beyond the latest average date at which it is safe to sow or plant, all of which combines to make his labor more productive.

These problems and other problems are far from being solved and we look to the investigational agencies of the agricultural colleges and the United States Department of Agriculture to work out their solution and to the extension agencies in disseminating the information in usable form. If farm management presupposes a knowledge of all phases of farming, and if it is a science which has for its purpose the coördination of all the factors of a farm business to the end that the most profitable and the most efficient farm unit may be evolved, then it must occupy a position of éminence and be given the means and latitude for consistent practical development commensurate with its importance.

I do not believe that we will have developed the most practical and the most usable information in farm management until every investigational agency or institution is working in accordance with a project that is consistently planned, first to solve the major problems, second to determine the type or types of farm organizations that is the most efficient productive unit and third, the testing and improving of the principles involved in such types of farm organization on farm management laboratory farms to be operated under the supervision of the agricultural colleges. Records representing the average accomplishments of the most successful farms in a given community do probably not represent the highest attainment in farm efficiency and there may be need of confirming and even attempting to improve upon the principles established by such records.